

REMARKS

Claims **1-8, 10, 11, and 14** are pending. By this amendment, claims **11 and 14** are amended and claims **13 and 16** cancelled without prejudice or disclaimer. These amendments do not raise new issues that need further search and/or consideration. Specifically, the subject matter of the dependent claims 13 and 16 (e.g., adjusting said anchor position in response to gaze dwell) is now incorporated into the respective independent claims. As such, the Examiner has already considered these features. Alternatively, the amendments place the application in better form for appeal. Consequently, the amendments should be entered into the record. Applicants respectfully request reconsideration and timely withdrawal of the pending rejections for the reasons discussed below.

Drawings

Applicants appreciate the indication that the drawings filed on March 6, 2002 are accepted.

Response to Arguments

First, the Examiner argues that the word “dynamic” is not a significantly limiting term, and further suggests that the meaning of the word “dynamic” is given by reference to the Microsoft Computer Dictionary, Fifth Edition. Applicants do not agree with the Examiner, and submit that each and every term in a claim is significant. The term “dynamic”, for example, references to the fact that the anchor position can be adjusted by the position of gaze dwell, in real time. There is no requirement for a pointer or other mechanical device to change or adjust

the anchor position. The only requirement is the eye gaze dwell, which is clear in view of Applicants' specification.

35 U.S.C. § 103 Rejection

Claims **1-6** are rejected under 35 U.S.C. §103(a) over U. S. Patent No. 5,850,211 to Tognazzini, *et al.* ("Tognazzini") in view of U. S. Patent No. 5,867,158 issued to Muraski, *et al.* ("Muraski"). Claims **7, 8** and **10** are rejected under 35 U.S.C. §103(a) over the combination of Tognazzini and Muraski and U.S. Patent No. 6,361,273 to Lemelson, *et. al.* ("Lemelson"). Claims **11** and **14** are rejected under 35 U.S.C. §103(a) over the combination of Tognazzini and Lemelson. Claims **13** and **16** are rejected under 35 U.S.C. §103(a) over the combination of Tognazzini and Lemelson in view of Muraski. These rejections are respectfully traversed.

In order to reject a claim under 35 U.S.C. §103(a), the MPEP mandates that three basic criteria must be met to provide a *prima facie* case of obviousness:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

However, the combination of references does not show all of the features of the claimed invention. Additionally, Applicants are of the opinion that there is no motivation to combine the references, as suggested by the Examiner.

Claims 1-8 and 10

Claim 1 recites, in pertinent part:

... control means for adjusting a speed of said scrolling information if said gaze position deviates from said anchor position and for dynamically adjusting said anchor position in response to gaze dwell.

However, this feature is not shown by the combination of references presented by the Examiner.

Specifically, the Examiner asserts that the combination of Tognazzini and Muraski teaches the claimed invention, e.g., changing a reference position via eye gaze. To come to this conclusion, the Examiner is of the opinion that the Muraski hands-on system can be used in the Tognazzini device to show the features of the claimed invention. Applicants disagree with this premise.

In particular, there is no teaching in either reference to show that the anchor position can be changed based on an eye gaze dwell. If there is to be any interpretation, Applicants submit that the use of the Muraski hands-on system (i.e., the use of a hand-held pointer) and the Tognazzini system would result in:

- (i) a screen that can scroll up and down, at different speeds, based on the position of a user's eye; and
- (ii) a reference point that can be changed based on a manual touching of the screen with a pointer.

Simply, this is based on the fact that Muraski teaches using a mechanical input device to change a reference position, and Tognazzini teaches scrolling of the screen based on eye movement. However, none of the references even remotely teaches the use changing the reference position based on eye gaze dwell.

Additionally, Applicants submit that, in any event, there is no motivation to even combine these references. First, Applicants disagree with the Examiner's premise that selecting areas of a display using eye gaze is analogous to selecting areas with a mechanical input device. An eye-tracking system is a totally automated system, with no conscious feedback from the user. In contrast, the Muraski system is a manual input system in every conceivable way, not only from the types of hardware and software used, but also to the process steps themselves. These references are thus non-analogous.

Being more specific, Tognazzini selects areas of a display screen by measuring whether a user's gaze is inside or outside the boundaries of an object. In contrast, Muraski teaches looking at a display screen and positioning a pen or a finger over a designated point, which differs from a fixed reference point, on the display screen. Based on this difference, an algorithm determines which way to scroll the text or picture. The reference point taught by Muraski may be moved manually, again by positioning a pen or finger over a chosen point on the display screen. Such significant differences render the references non-analogous, and a person skilled in the art would not have been motivated to combine these references at the time the invention was made.

Applicants further submit that one of skill in the art would not have looked at both Tognazzini and Muraski for such a combination. In fact, Tognazzini would never have contemplated a system which is not hands-free. By way of illustration, the Tognazzini

eyetracking system is specifically designed to avoid using a manual input device, such as finger or a pen as taught by Muraski, to touch a display screen. Tognazzini teaches hands-free operation. Contrary to this, Muraski teaches hands-on operation. These concepts are so completely different that one of ordinary skill in the art would not have looked at these two references in order to attempt to achieve the claimed invention. There simply is no motivation provided by either of these references.

It is also submitted that one of skill in the art would not have looked backwards in the art in order to achieve the claimed invention. That is, Tognazzini would not look backward to hands-on technology it superseded. In any event, such a combination would result in an eye-gaze system (Tognazzini) having a reference point capable of being adjusted (Muraski) by touching a pen or a finger to a particular point on the display screen (Muraski). However, these features are not shown in claim 1, which recites dynamically adjusting an anchor position based on the position of the gaze dwell.

Additionally, a person skilled in the art at the time the invention was made would not have been motivated to combine Tognazzini and Muraski because each reference addresses totally different problems. For example, Tognazzini is directed to using eye-gaze to control the speed of scrolling text, while Muraski is directed to using a pen and touch screen to view portions of an image that is too large to be fully displayed. This is buttressed by the fact that the field of invention and problems addressed by Muraski vastly differs from the field of invention and problems addressed by Tognazzini.

Furthermore, from the eye-tracking disclosures of Tognazzini and Lemelson, as well as the other patents cited, but not relied on, by the Examiner (e.g., Mizouchi, Amir, and DeLuca), it

is apparent that at the time the invention was made, eye-tracking systems remained large, bulky, and inapplicable to the small handheld devices disclosed by Muraski. Clearly, the problems solved by Muraski are very different from those solved by Tognazzini, and one skilled in the art, attempting to solve Tognazzini's problems, would not have been motivated to look to Muraski for solutions, and *vice versa*.

Lastly, since the problems addressed by each reference are so different, and because Muraski makes no mention of being adaptable to eye-gaze systems, the Examiner's suggestion makes sense only if a person skilled in the art had first read Applicants' disclosure. But this is hindsight reasoning, which is impermissible.

For these reasons, claim 1 is distinguishable over Tognazzini and Muraski. Claims 2-8 and 10 are also allowable by virtue of their dependencies on distinguishable base claim 1. Thus, withdrawal of the rejections of claims 1-8 and 10 is respectfully requested.

Claims 11, 13, 14, and 16

The rejections of claims 13 and 16 are moot, as these claims have been cancelled without prejudice or disclaimer. However, their features were incorporated into claims 11 and 14, respectively. Similar to claim 1, claims 11 and 14 recite:

... adjusting the anchor position based on a gaze dwell ...

The Examiner proposes that the combination of Tognazzini, Lemelson, and Muraski discloses this feature, amongst the remaining features of these claims. Applicants respectfully disagree.

The Examiner admits that neither Tognazzini nor Lemelson explicitly disclose that a controller dynamically adjusts the reference position, i.e., anchor position, to a position of gaze dwell, but suggests that adding Muraski cures the deficiencies of Tognazzini and Lemelson. This is not correct.

As discussed above, Tognazzini discloses an eye-track driven scrolling system that expressly avoids the use of any touch-based commands. As also disclosed above, Muraski discloses moving a reference point by manipulating a touch screen using a pen or finger. Like Tognazzini, Lemelson also is directed to a system that uses eye-gaze to control the rate of information presented in a display. In both Tognazzini and Lemelson, a reference point, and various selectable objects, is fixed in particular stationary positions. For example, the reference point in Tognazzini is horizontally fixed at the midpoint of the screen. The reference points disclosed by Lemelson are fixed at each side, top, and bottom edges of the display screen. Neither Lemelson nor Tognazzini nor Muraski disclose that reference points, or any other object on the display screen, can be moved with, or in response to, eye gaze.

Consequently, even if Muraski were combined with Lemelson and Tognazzini, the resultant combination would not disclose the feature recited by claims 11 and 14. Because Muraski fails to mention eye gaze, and because Lemelson and Tognazzini would not look backward to hands-on technology they made unnecessary, the combination proposed by the Examiner would result in an eye-gaze system (Lemelson and/or Tognazzini) in which a reference point could be manually changed (Muraski) by touching a pen or finger to a touch screen (Muraski). This is contrary the claimed invention, which recites adjusting an anchor position in response to gaze dwell. Consequently, claims 11 and 14 are each allowable over Tognazzini,

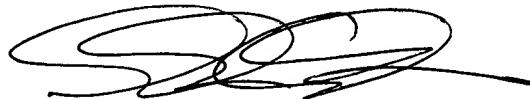
Lemelson, and Muraski, either alone or in combination. Accordingly, Applicants respectfully request that the rejections of claims 11 and 14 be withdrawn.

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CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **IBM Deposit Account No. 50-0510** (Yorktown).

Respectfully submitted,



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